

Understanding Adult Obesity



National Institute of Diabetes and
Digestive and Kidney Diseases

NATIONAL INSTITUTES OF HEALTH

WIN *Weight-control Information Network*

More than 60 percent of Americans aged 20 years and older are overweight. One-quarter of American adults are also obese, putting them at increased health risk for chronic diseases such as heart disease, type 2 diabetes, high blood pressure, stroke, and some forms of cancer.

This fact sheet provides basic information about obesity: What is it? How is it measured? What causes it? What are the health risks? What can you do about it?

How is Obesity Measured?

Everyone needs a certain amount of body fat for stored energy, heat insulation, shock absorption, and other functions. As a rule, women have more body fat than men. Most health care providers agree that men with more than 25 percent body fat and women with more than 30 percent body fat are obese.

Measuring the exact amount of a person's body fat is not easy. The most accurate measures are to weigh a person underwater or to use an X-ray test called Dual Energy X-ray Absorptiometry (DEXA). These methods are not practical for the average person, and are done only in research centers with special equipment.

There are simpler methods to estimate body fat. One is to measure the thickness of the layer of fat just under the skin in several parts of the body. Another involves sending a harmless amount of electricity through a person's body. Both methods are used at health clubs and commercial weight loss programs. Results from these methods, however, can be inaccurate if done by an inexperienced person or on someone with severe obesity.

Because measuring a person's body fat is difficult, health care providers often rely on other means to diagnose obesity. Weight-for-height tables, which have been used for decades, usually have a range of acceptable weights for a person of a given height. One problem with these tables is that there are many versions, all with different weight ranges. Another problem is that they do not distinguish between excess fat and muscle. A very muscular person may appear obese, according to the tables, when he or she is not.

In recent years, body mass index (BMI) has become the medical standard used to measure overweight and obesity.

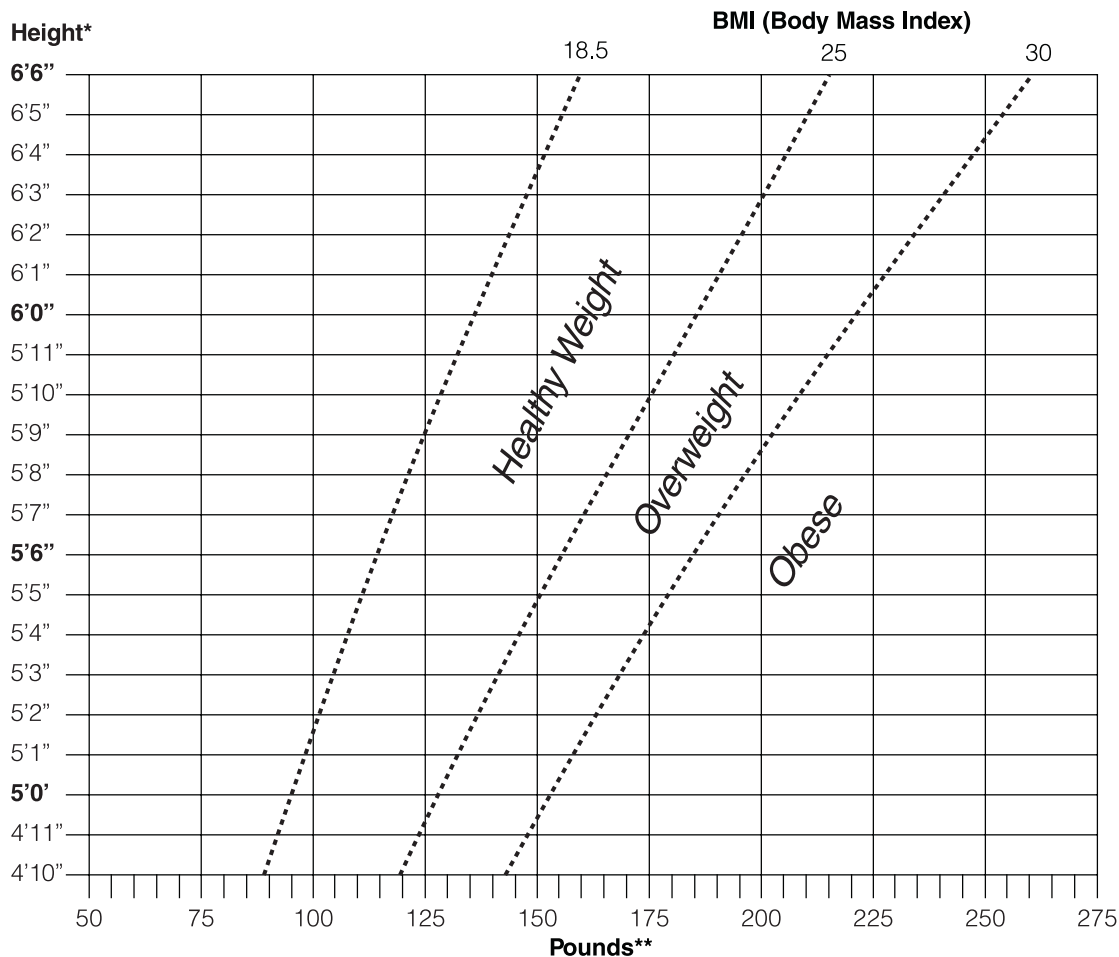
Body Mass Index

BMI uses a mathematical formula based on a person's height and weight. BMI equals weight in kilograms divided by height in meters squared ($BMI = \text{kg}/\text{m}^2$). The BMI table that follows has already calculated this information.

Although the BMI ranges shown in the table are not exact ranges of healthy and unhealthy weight, they are useful guidelines. A BMI of 25 to 29.9 indicates a person is overweight. A person with a BMI of 30 or higher is considered obese.

What is obesity?

To most people, the term "obesity" means to be very overweight. Health professionals define "overweight" as an excess amount of body weight that includes muscle, bone, fat, and water. "Obesity" specifically refers to an excess amount of body fat. Some people, such as bodybuilders or other athletes with a lot of muscle, can be overweight without being obese.



Find your weight on the bottom of the graph. Go straight up from that point until you come to the line that matches your height. Then look to find your weight group.

* Without shoes
** Without clothes

Like the weight-to-height table, BMI does not show the difference between excess fat and muscle. BMI, however, is closely associated with measures of body fat. It also predicts the development of health problems related to excess weight. For these reasons, BMI is widely used by health care providers.

Body Fat Distribution: “Pears” vs. “Apples”

Health care providers are concerned not only with how much fat a person has, but also where the fat is located on the body. Women typically collect fat in their hips and buttocks, giving them a “pear” shape. Men usually build up fat around their bellies, giving them more of an “apple” shape. Of course some men are pear-shaped and some women become apple-shaped, especially after menopause. If you carry fat mainly around your waist, you are more likely to develop obesity-related health problems. Women with a waist measurement of more than 35 inches or men with a waist measurement of more than 40 inches have a higher health risk because of their fat distribution.

Causes of Obesity

In scientific terms, obesity occurs when a person consumes more calories than he or she burns. What causes

this imbalance between calories in and calories out may differ from one person to another. Genetic, environmental, psychological, and other factors may all play a part.

Genetic factors

Obesity tends to run in families, suggesting a genetic cause. Yet families also share diet and lifestyle habits that may contribute to obesity. Separating these from genetic factors is often difficult. Even so, science shows that heredity is linked to obesity.

In one study, adults who were adopted as children were found to have weights closer to their biological parents than to their adoptive parents. In this case, the person’s genetic makeup had more influence on the development of obesity than the environment in the adoptive family home.

Environmental factors

Genes do not destine people to a lifetime of obesity, however. Environment also strongly influences obesity. This includes lifestyle behaviors such as what a person eats and his or her level of physical activity. Americans tend to eat high-fat foods, and put taste and convenience ahead of nutrition. Also, most Americans do not get enough physical activity.

Although you cannot change your genetic makeup, you can change your eating habits and levels of activity. Try these techniques that have helped some people lose weight and keep it off:

- Learn how to choose more nutritious meals that are lower in fat.
- Learn to recognize and control environmental cues (like inviting smells) that make you want to eat when you're not hungry.
- Become more physically active.
- Keep records of your food intake and physical activity.

Psychological factors

Psychological factors may also influence eating habits. Many people eat in response to negative emotions such as boredom, sadness, or anger.

Most overweight people have no more psychological problems than people of average weight. Still, up to 10 percent of people who are mildly obese and try to lose weight on their own or through commercial weight loss programs have binge eating disorder. This disorder is even more common in people who are severely obese.

During a binge eating episode, people eat large amounts of food and feel that they cannot control how much they are eating. Those with the most severe binge eating problems are also likely to have symptoms of depression and low self-esteem. These people may have more difficulty losing weight and keeping it off than people without binge eating problems.

If you are upset by binge eating behavior and think you might have binge eating disorder, seek help from a health professional such as a psychiatrist, psychologist, or clinical social worker.

Other causes of obesity

Some illnesses can lead to obesity or a tendency to gain weight. These include hypothyroidism, Cushing's syndrome, depression, and certain neurological problems that can lead to overeating. Also, drugs such as steroids and some antidepressants may cause weight gain. A doctor can tell whether there are underlying medical conditions that are causing weight gain or making weight loss difficult.

Consequences of Obesity

Health Risks

Obesity is more than a cosmetic problem; it is a health hazard. Approximately 280,000 adult deaths in the United States each year are related to obesity.

Several serious medical conditions have been linked to obesity, including type 2 diabetes, heart disease, high blood pressure, and stroke. Obesity is also linked to higher rates of certain types of cancer. Obese men are more likely than non-obese men to die from cancer of the colon, rectum, or prostate. Obese women are more likely than non-obese women to die from cancer of the gallbladder, breast, uterus, cervix, or ovaries.

Other diseases and health problems linked to obesity include:

- Gallbladder disease and gallstones.
- Liver disease.
- Osteoarthritis, a disease in which the joints deteriorate. This is possibly the result of excess weight on the joints.
- Gout, another disease affecting the joints.
- Pulmonary (breathing) problems, including sleep apnea in which a person can stop breathing for a short time during sleep.
- Reproductive problems in women, including menstrual irregularities and infertility.

Health care providers generally agree that the more obese a person is, the more likely he or she is to develop health problems.

Psychological and social effects

Emotional suffering may be one of the most painful parts of obesity. American society emphasizes physical appearance and often equates attractiveness with slimness, especially for women. Such messages make overweight people feel unattractive.

Many people think that obese individuals are gluttonous, lazy, or both, even though this is not true. As a result, obese people often face prejudice or discrimination in the job market, at school, and in social situations. Feelings of rejection, shame, or depression are common.

Who Should Lose Weight?

Health care providers generally agree that people who have a BMI of 30 or more can improve their health through weight loss. This is especially true for people who are severely obese.

Preventing additional weight gain is recommended if you have a BMI between 25 and 29.9, unless you have other risk factors. Obesity experts recommend you try to lose weight if you have two or more of the following:

- **Family history of certain chronic diseases.** If you have close relatives who have had heart disease or diabetes, you are more likely to develop these problems if you are obese.

- **Pre-existing medical conditions.** High blood pressure, high cholesterol levels, or high blood sugar levels are all warning signs of some obesity-associated diseases.
- **“Apple” shape.** If your weight is concentrated around your waist, you may have a higher risk of heart disease, diabetes, or cancer than people of the same weight who have a “pear” shape.

Fortunately, a weight loss of 5 to 10 percent can do much to improve health by lowering blood pressure and cholesterol levels. In addition, recent research has shown that a 5- to 7-percent weight loss can prevent type 2 diabetes in people at high risk for the disease.

How is Obesity Treated?

The method of treatment depends on your level of obesity, overall health condition, and motivation to lose weight. Treatment may include a combination of diet, exercise, behavior modification, and sometimes weight-loss drugs. In some cases of severe obesity, gastrointestinal surgery may be recommended. Remember, weight control is a life-long effort.

For more information on health risks, treatment options, and binge eating, refer to these WIN publications:

Binge Eating Disorder

Do You Know the Health Risks of Being Overweight?

Gastrointestinal Surgery

Weight Loss for Life

Additional Reading

Allison DB, Fontaine KR, Manson JE, Stevens J, VanItallie TB. Annual deaths attributable to obesity in the United States. *Journal of the American Medical Association*; 1999;282(16):1530-1538.

National Heart, Lung, and Blood Institute. *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. Department of Health and Human Services, National Institutes of Health; 1998. NIH Publication No. 98-4083.

National Task Force on Prevention and Treatment of Obesity. Overweight, obesity, and health risk. *Archives of Internal Medicine*. 2000;160(7):898-904.

Partnership for Healthy Weight Management. *Weight Loss: Finding a Weight Loss Program that Works for You*. 2000. Phone: 1-888-8-PUEBLO. Website: www.consumer.gov/weightloss/brochures.htm.

Partnership for Healthy Weight Management. *Setting Goals for Healthy Weight Loss*. 1999. Phone: 1-888-8-PUEBLO. Website: www.consumer.gov/weightloss/brochures.htm.

The President's Council on Physical Fitness and Sports, Department of Health and Human Services. *Exercise and Weight Control*. Website: www.fitness.gov/Reading_Room/reading_room.html.

U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans*. 2000. Phone: 1-888-878-3256. Website: www.usda.gov/cnpp or www.health.gov/dietaryguidelines.

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The Weight-control Information Network (WIN) is a national service of the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institutes of Health, which is the Federal Government's lead agency responsible for biomedical research on nutrition and obesity. Authorized by Congress (Public Law 103-43), WIN provides the general public, health professionals, the media, and Congress with up-to-date, science-based health information on weight control, obesity, physical activity, and related nutritional issues.

WIN answers inquiries, develops and distributes publications, and works closely with professional and patient organizations and Government agencies to coordinate resources about weight control and related issues.

Publications produced by WIN are carefully reviewed by both NIDDK scientists and outside experts. This fact sheet was also reviewed by Thomas Wadden, Ph.D., Director, Weight and Eating Disorders Program, University of Pennsylvania, and Goulda Downer, Ph.D., President, Metroplex Health and Nutrition Services.



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